Paronychia revoluta, a New Species of Caryophyllaceae from Brazil

Cláudia Elena Carneiro

Universidade Estadual de Feira de Santana, Departamento de Ciências Biológicas, Laboratório de Micromorfologia Vegetal (LAMIV), BR 116, km 3, Campus Universitário, CEP 44031-460, Feira de Santana, Bahia, Brazil. carneiro@uefs.br

Antonio Furlan

Universidade Estadual Paulista, Instituto de Biociências, Departamento de Botânica, Av. 24A, 1515, Caixa Postal 199, Bela Vista, CEP 13506-900, Rio Claro, São Paulo, Brazil. afurlan@rc.unesp.br

ABSTRACT. A new species of *Paronychia*, *P. revoluta*, from the state of Rio Grande do Sul, Brazil, is described and illustrated. This species is closely related to *P. camphorosmoides*, distinguished from it by linear-subulate leaves with a revolute margin and prominent midribs. It is also allied to *P. fasciculata*, from which it differs in the lanceolate, acuminate, fimbriate, and whitish stipules, and linear-subulate leaves.

Key words: Brazil, Caryophyllaceae, *Paronychia*.

Paronychia Miller (Caryophyllaceae) comprises about 110 species distributed among three subgenera (Chaudhri, 1968; Bittrich, 1993). This genus is characterized by the presence of stipules and bracts, very small and clustered flowers often concealed by the bracts, filiform petals, episepalous stamens, uniovulate ovary, utricle rupturing irregularly at base, globose seeds, and a curved embryo.

Although occurring mainly in the Mediterranean region, the species of *Paronychia* are widely distributed throughout the world, inhabiting warm-temperate, montane, and occasionally alpine regions. They may be found in dry stony or rocky places, calcareous soils, mountain steppes or along sea coasts and river banks.

In this paper a new *Paronychia* species, discovered during a study of Caryophyllaceae from Brazil, is described and illustrated.

Paronychia revoluta C. E. Carneiro & A. Furlan, sp. nov. TYPE: Brazil. Rio Grande do Sul: Cambará do Sul, 29 Jan. 1983, *L. P. de Queiroz & L. S. S. Faria 470* (holotype, HUEFS; isotypes, ALCB, HRCB). Figure 1.

Herba perennis caespitosa. Caulis per totam longitudinem ramificatus, puberulus. Folia sessilia, lineari-subulata, 2.5–6 mm longa, 0.3–0.4 mm lata, apice acuminata, aristata, margine revoluta, costa subtus prominente; stipulae lanceolatae, acuminatae, margine ciliato-fimbriatae. Glomeruli laterales; bracteae lanceolatae, acuminatae, floribus breviores. Flores conici, 1–1.5 alti; sepala lanceolata, mucronata, cucullata, margine ciliata; petala 0.10–0.25 mm longa; stylus in stigmata dua filiformia, inaequalia, divergentia exeuns. Fructus globosus, apice truncato dense papillosus. *Paronychiae camphorosmoidi* proxima, sed foliorum forma differt.

Perennial herbs, ca. 16–26 cm tall; stems spreading on the surface of the ground, branches ascending or erect, much branched laterally, brownish, internodes 2–10 mm long, densely puberulent. Leaves simple, opposite, sessile, 2.5–6 × 0.3–0.4 mm, linear-subulate, apparently cylindric, acuminate, awned (awn 0.3–0.6 mm long), subglabrous, margin revolute, with short stiff trichomes in the margin and on the midribs of the abaxial surface, midribs well-marked on the abaxial surface; stipules scarious, 2–2.5 mm long, lanceolate, acuminate, margin ciliate-fimbriate, base lanuginous. Flowers small in lateral or pseudo-axillary glomerules; bracts scarious, very conspicuous, slightly shorter than the flowers, 1–1.3 mm long, lanceolate, acuminate, glabrous, margin densely fimbriate; flowers conical, 1–1.5 mm long, bisexual; pedicels 0.3–0.5 mm long, glabrous; sepals 5, 0.6–1 mm long, lanceolate, slightly cucullate, mucronate (mucro ca. 0.05 mm), without a membranous margin, ciliate, 3-ribbed, sparsely puberulent; petals 5, 0.1–0.25 mm long, alternating with sepals, inserted in the perigynous ring, ca. 0.3 mm tall, filiform, hyaline, glabrous, with rounded apex; stamens 5, opposite to the sepals, alternate with petals, inserted in the membranous perigynous ring, 0.6–0.7 mm long; filaments ca. 0.4 mm long, filiform, glabrous; anthers 0.2–0.3 mm long, oblong, glabrous; ovary

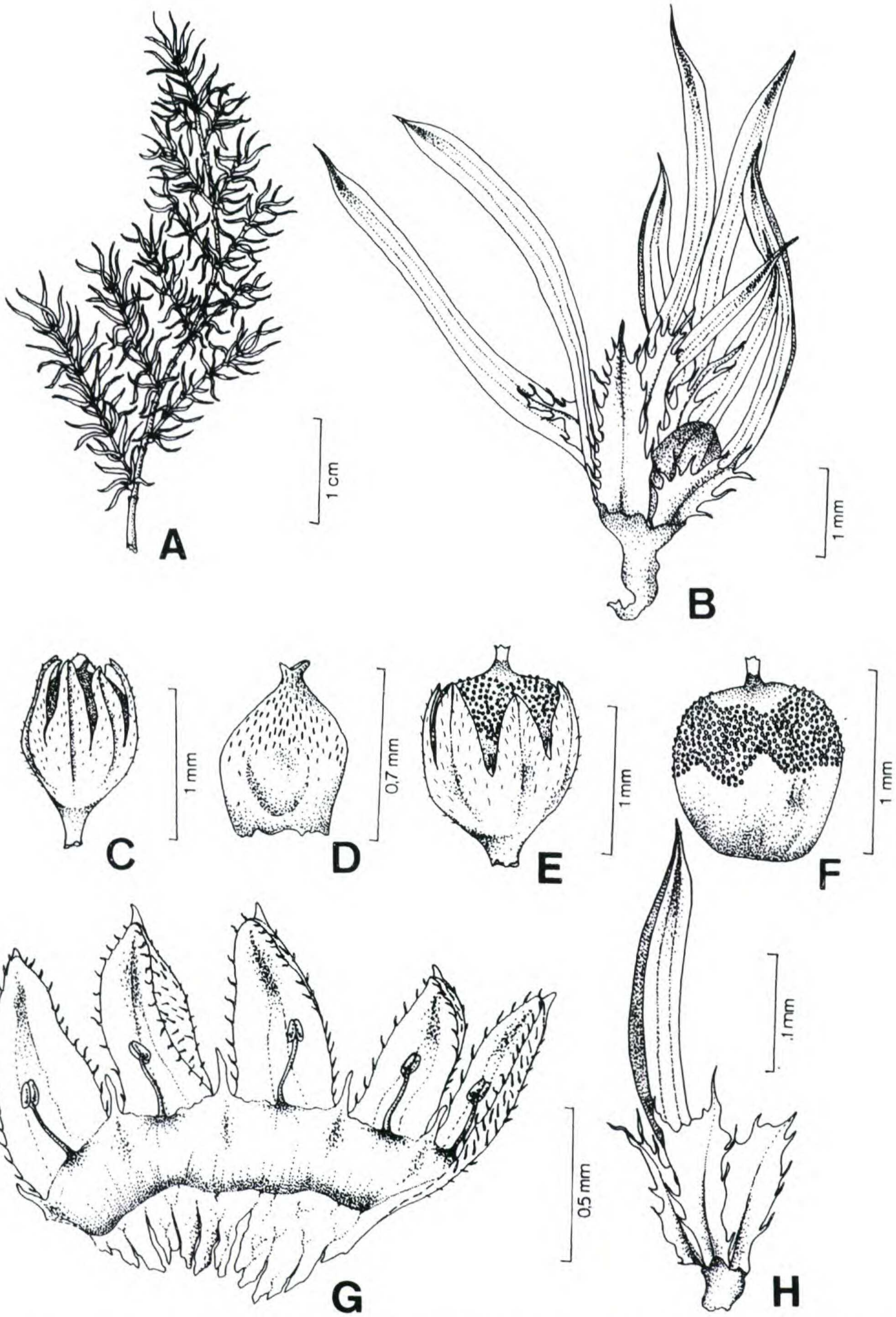

Figure 1. *Paronychia revoluta* C. E. Carneiro & A. Furlan. —A. Vegetative branch. —B. Inflorescence. —C. Flower. —D. Ovary. —E. Fruit with persistent calyx. —F. Fruit: upper part papillose. —G. Open flower: sepals, petals, and stamens. —H. Vegetative node showing stipules. (A beautiful illustration from the holotype, *Queiroz & Faria 470*, HUEFS.)

ca. 0.6 mm long, conic, membranous, papillose, uniloculate, uniovulate, with basal placentation; style ca. 0.2 mm long, bifid near apex with unequal stigmatose lobes. Fruit a utricle, membranous, enclosed in the persistent calyx, 1–1.5 mm long, globose, apex slightly truncate, densely papillose-warty on the upper part; seed ca. 0.9 × 0.8 mm, subglobose; testa smooth, bright, dark brown, sometimes reddish.

Paronychia revoluta is known only from the state of Rio Grande do Sul, Brazil, in grasslands, pastures, or slightly humid places. It was found flowering and fruiting between January and February and also in November and December.

The new species is closely related to *Paronychia camphorosmoides* Cambessèdes, which occurs throughout southeastern Brazil. The specimens analyzed were usually identified as *P. camphorosmoides*, and these two taxa were often found on the same sheet, as for example on *Rambo s.n. (PACA 53884)* and *Camargo 2620 (PACA). Paronychia revoluta* is distinguished from *P. camphorosmoides* mainly by its linear-subulate leaves with revolute margins and very conspicuous midribs, marked and semicylindric on the abaxial surface. On the contrary, *P. camphorosmoides* has lanceolate leaves with slightly thickened margins, and inconspicuous midribs. *Paronychia revoluta* also resembles the endemic to Minas Gerais, *P. fasciculata*, in the similar habit, but differs in having whitish stipules, 2–2.5 mm long, lanceolate, acuminate, with ciliate-fimbriate margins and the base lanuginous, and linear-subulate leaves with awned apices; in contrast, *P. fasciculata* has reddish stipules, 1.5–2 mm long, ovate, acute and with ciliate margins, and lanceolate leaves with acuminate apices.

Paratypes. BRAZIL. **Rio Grande do Sul:** Bom Jesus, 15 Jan. 1942, *B. Rambo s.n.* (PACA 8870); Passo da Guarda, 15 Jan. 1952, *B. Rambo s.n.* (PACA 51899); Serra da Rocinha, 3 Feb. 1953, *B. Rambo s.n.* (PACA 53884-A); Farroupilha, 25 Nov. 1957, *Camargo 2620-B* (PACA); São Francisco de Paula, Serra do Fachinal, 14 Feb. 1946, *B. Rambo s.n.* (PACA 32134); Azulega, 15 Feb. 1946, *B. Rambo s.n.* (PACA 32241); Tainhas, 16 Feb. 1946, *B. Rambo s.n.* (PACA 32278); Cambará, Feb. 1948, *B. Rambo s.n.* (PACA 36145); Vacaria, Fazenda da Ronda, 10 Jan. 1947, *B. Rambo s.n.* (PACA 34982), Passo do Socorro, 26 Dec. 1951, *B. Rambo s.n.* (PACA 51463, PACA 51466).

Acknowledgments. Financial support was provided by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). We thank Alano Calheira Durães for preparing the illustration. We also thank the curators of ALCB, HRCB, HUEFS, and PACA for the loan of herbarium material.

Literature Cited

Bittrich, V. 1993. Caryophyllaceae. Pp. 206–236 *in* K. Kubitzki, J. G. Rohwer & V. Bittrich (editors), The Families and Genera of Vascular Plants, Vol. II. Flowering Plants Dicotyledons: Magnoliid, Hamamelid and Caryophyllid Families. Springer-Verlag, Berlin.

Chaudhri, M. N. 1968. A revision of the Paronychiinae. Meded. Bot. Mus. Herb. Rijks. Univ. Utrecht 285: 1–440.